NOTICE!

ALL DRAWINGS
ARE LOCATED
AT THE END OF
THE DOCUMENT

ER/WM&I DDT

Source/Driver (Name & Number from ISP, IAG milestone, Mgmt Action, Corres Control, etc)	**Closure #** (Outgoing Correspondence Control #, if applicable)	**Due Date**

A L Primrose	J H Moore	J E Law
Originator Name	**Quality Assurance Approval**	**Contractor Manager(s)**

J L Butler	A D Rodgers
Kaiser-Hill Program Manager(s)	**Kaiser-Hill Director**

Document Subject

TRANSMITTAL OF "903 PAD/RYAN'S PIT PLUME PROJECT COMPLETION REPORT FISCAL YEAR 1999, RF/RMRS-99-424 UN" - JEL-084-99

KH-00003NS1A August 30, 1999

Discussion and/or Comments:

Attached please find eight (8) copies of the ***"903 Pad/Ryan's Pit Plume Project Completion Report Fiscal Year 1999, RMRS-99-424 UN"*** for transmittal to Kaiser-Hill and the Department of Energy (DOE) Preliminary review comments have been received from Kaiser-Hill and have been incorporated into this document

If you have any questions concerning this transmittal, please contact Annette Primrose at extension 4385

pw

Attachment
As Stated

cc
A C Crawford w/o Attachment
S H Mills
S H Singer
Administrative Records
RMRS Records

ADMIN RECORD

RF/RMRS-99-424 UN

903 PAD/RYAN'S PIT PLUME PROJECT

COMPLETION REPORT
FISCAL YEAR 1999

Rocky Flats Environmental Technology Site
August 30, 1999

2

TABLE OF CONTENTS

FIGURES

APPENDIX

ACRONYM LIST

DNAPLs	Dense, non-aqueous phase liquids
DOE	Department of Energy
ID	Inside Diameter
IMP	Integrated Monitoring Plan
PVC	Polyvinyl Chloride
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RMRS	Rocky Mountain Remediation Services
SID	South Interceptor Ditch
VOC	Volatile Organic Compound

1 0 INTRODUCTION

This report documents the completion of the 903 Pad/Ryan's Pit Plume Project at the Rocky Flats Environmental Technology Site This project was conducted in accordance with Technical Memorandum No 1, Monitored Natural Attenuation of the 903 Pad/Ryan's Pit Plume (RMRS 1998a) and the Sampling and Analysis Plan for Groundwater Monitoring at the 903 Pad/Ryan's Pit VOC Plume (RMRS 1999)

As a result of past waste storage practices at the 903 Pad and Ryan's Pit, volatile organic compounds are present in groundwater in excess of the Action Level Framework Tier II level groundwater concentrations defined in the Rocky Flats Cleanup Agreement (RFCA) (DOE 1996) The contaminated groundwater has migrated away from source areas towards surface water streams The objective of this project was to install plume monitoring wells and perform characterization activities to evaluate whether monitored natural attenuation is an effective means of ensuring the protection of surface water quality As stated in the Technical Memorandum (RMRS 1998a) natural attenuation includes physical, chemical and biological processes that limit or control contaminants in the environment This may include any or all of the following processes

- Chemical Transformation,
- Biodegradation,
- Dilution,
- Dispersion,
- Sorption, and
- Volatilization

The Fiscal Year 1999 work scope for the 903 Pad/Ryan's Pit Plume Project was to install a line of temporary well points using a Geoprobe® to locate potential groundwater pathways to surface water, then install long term monitoring wells in the locations most suitable for interception of groundwater These long term monitoring wells will be used to monitor whether natural attenuation is limiting the impact of the 903 Pad/Ryan's Pit Plume on surface water Physical processes may be as effective as degradation in controlling contaminants Data collected from these monitoring wells will be utilized to determine which of these processes are taking place

Field activities were limited to well installation, well development, and initial groundwater and surface water sampling activities Longer-term monitoring will be specified in the Integrated Monitoring Plan (IMP)

This completion report discusses the specifics of the temporary well point and long term monitoring well installation

2.0 PROJECT BACKGROUND

The 903 Pad area was used to store drums that contained radioactively contaminated oils and VOCs from the summer of 1958 to January 1967 (DOE 1992) The drums were removed beginning in 1967, but an estimated 5,000 gallons of contaminated liquid containing approximately 86 grams of plutonium had leaked from the drums into the soil From 1968 through 1969, some of the radiologically contaminated

material was removed, the surrounding area was regraded, and much of the area was covered with clean road base and an asphalt cap (DOE 1992) Dense, non-aqueous phase liquids (DNAPLs) were suspected to exist underneath the 903 Pad, as high concentrations of VOCs are present in the groundwater (greater than 1% of the chemical's aqueous solubility) However, DNAPLs were not detected in borings drilled at the Pad during the 903 Pad Site Characterization Project (RMRS 1998b)

Ryan's Pit was located approximately 150 feet south of the 903 Pad and was approximately 20 feet long, 10 feet wide, and 5 feet deep Ryan's Pit was used as a waste disposal site starting in 1969 and was later used for nonradioactive liquid chemical disposal starting in 1971 Use of the pit ceased in 1971 VOCs disposed of at this location included tetrachloroethene, trichloroethene, and carbon tetrachloride In addition to VOC disposal, paint thinner and small quantities of construction-related chemicals may also have been placed in Ryan's Pit (DOE 1992) In 1995, source removal activities were completed at Ryan's Pit, including the removal of 180 cubic yards of contaminated soils (RMRS 1997)

The 903 Pad/Ryan's Pit Plume is defined as the lobe of VOC contaminated groundwater that extends southward from these two source areas toward the South Interceptor Ditch (SID) and Woman Creek The major groundwater plume contaminants are carbon tetrachloride, trichloroethene and tetrachloroethene which correspond to the waste materials reported to have been leaked or disposed of at the source areas

The 903 Pad is located on the flat surface at the southern edge of the pediment A south facing hillside slopes downward from the 903 Pad to the SID and Woman Creek Ryan's Pit is located on the hillside to the south of the 903 Pad In the 903 Pad area, the Rocky Flats Alluvium is 10 feet thick at the northwest corner of the Pad which is near a bedrock high, and 25 feet thick at the southeast corner which is within a bedrock channel The Rocky Flats Alluvium is truncated by erosion and does not extend to Ryan's Pit At Ryan's Pit and further down slope toward Woman Creek, surficial deposits consist principally of clay-rich colluvium and reworked Rocky Flats Alluvium that has been transported downgradient Bedrock is composed of weathered claystone of the Arapahoe and Laramie Formations In addition, the Arapahoe No 1 Sandstone subcrops under the alluvium at the extreme northwest corner of the 903 Pad

Groundwater flow is complex and is primarily controlled by bedrock surface features, interactions between geologic units, and variations in saturated thicknesses Groundwater flow paths in alluvial materials in the 903 Pad and Ryan's Pit area are relatively well defined by contact seeps with the underlying bedrock materials and by numerous wells On the hillside, flow is affected by variations in surficial and bedrock topography, and heterogenities within the colluvium and bedrock Areas of unsaturated colluvium and shallow bedrock are common Groundwater flow in the colluvium follows north-south trending small paleochannels cut into the underlying bedrock claystone One narrow paleochannel, approximately 150 to 300 feet wide, extends from the 903 Pad south through Ryan's Pit The areas surrounding these paleochannels are unsaturated

The 903 Pad/Ryan's Pit Plume is defined as the lobe of contaminated groundwater that flows southward from these two source areas toward the SID and Woman Creek drainage The primary plume contaminants are carbon tetrachloride, tetrachloroethene, and trichloroethene Discharge of contaminated groundwater has not been observed from the colluvium or weathered bedrock portion of this plume The lobe of contaminated groundwater which flows eastward from the 903 Pad is further addressed as part of the East Trenches Plume

3.0 WELL INSTALLATION

The locations of the four long-term monitoring wells were based on the presence and amount of free groundwater found in initial temporary well points located at potential drilling sites This approach was being taken to more accurately delineate preferential plume pathways and improve well and monitoring program success The temporary well points are shown on Figure 1 and were based on previous hydrogeologic investigations, current field observations, interpretation of groundwater flow directions, and seep locations Borings with the greatest saturated thickness and potential ability to supply water were considered to be the most favorable candidate sites for well installation

In addition to the temporary well points, surface water samples will be collected where plume flowpaths are projected to intersect the SID and Woman Creek These locations will be sampled at least twice next year to estimate potential flux to surface water

On the basis of the 14 temporary well points borings, four permanent well locations were chosen and are shown on Figure 1 Well (90099) was positioned next to well 01298 to monitor upgradient groundwater quality Two wells (90199 and 90299) were positioned to the south along primary plume pathways to monitor groundwater quality at the north edge of the SID The fourth well (90399) is paired with well 90199 to monitor VOC contamination in weathered bedrock

The four monitoring wells were installed beginning July 22, 1999 with completion on July 30, 1999 These wells were developed the following week, at which time an initial groundwater sample was collected A quarterly well sampling frequency is planned which will serve to optimize the seasonal aspects of water level and VOC concentration variations, while minimizing costs and other resources Subsequent sampling frequency will be specified in the IMP based on the sampling results of the first year Only VOC samples will be collected from these wells, because the purpose of the monitoring program is to evaluate the effectiveness of monitored natural attenuation on this plume of VOC-contaminated groundwater The data will be used to evaluate primary contaminant concentrations and trends for the purpose of protecting surface water quality

3 1 Well Design

The monitoring wells are conventional wells suitable for long-term monitoring of shallow water-bearing zones The screened intervals fully penetrate saturated colluvial materials To ensure that these wells have a multi-purpose monitoring function, potentially contaminated surface soils associated with the 903 Pad radionuclide release were cased-off from deeper zones using surface conductor casing isolation techniques Final depth determinations were made in the field based on actual drilling and initial depth to water results

All wells were installed using dual (aseptic) casing construction methods Well construction materials consisted of a two and one-half-foot (2 5') section of 15 ¼-inch inner diameter (ID) steel surface casing and concrete pad, and 2-inch ID, schedule 40 polyvinyl chloride (PVC) riser and factory cut (0 010-inch slot width) well screen, and a 2 3 foot sump at the base of the screen Protective casing consisting of 5 5/8-inch ID steel riser with locking cap and lock was set in sackrete to a depth of about 2 to 3 feet

Table 1 presents the construction details for each well Additional information is found in Appendix A

Table 1 Well Construction Details

Well Number	Location	Total Depth (feet)	Depth to Bedrock (feet)	Screened interval (feet)	Depth to water (feet)	Rationale
90099	Adjacent to well 01298	19 3	15 3	11 9-16 9	16 8	Monitor colluvial groundwater quality to assess natural attenuation along plume pathways
90199	At the north edge of the SID below well 01298	13 1	11	5 8-10 8	Dry	Monitor groundwater quality downgradient of well 01298
90299	At the north edge of the SID below well 01698	20 5	18	8 2-18 2	19 75	Monitor groundwater quality downgradient of well 01698
90399	At the north edge of the SID below well 01298	21	4	8 7-18 7	13 92	Monitor groundwater quality downgradient of well along plume pathways in weathered bedrock

4 0 DEVIATIONS FROM THE PLANS

There were no deviations from the Sampling and Analysis Plan or the Technical Memorandum

5.0 REFERENCES

DOE, 1992, *Final Historical Release Report for the Rocky Flats Plant*, 21100-TR-12501 01, Rocky Flats Plant, Golden, CO, July

DOE, 1996, *Final Rocky Flats Cleanup Agreement*, Rocky Flats Environmental Technology Site, Golden, CO, July

RMRS, 1997, *Closeout Report for the Remediation of Individual Hazardous Substance Site 109, Ryan's Pit*, RF-ER-96-0034 UN

RMRS, 1998a, *Technical Memorandum, Monitoring of the 903 Pad/Ryan's Pit Plume*, RF/RMRS-98-294 UN

RMRS, 1998b, *Final Sampling and Analysis Plan for the Site Characterization of the 903 Drum Storage Area (IHSS 112), 903 Lip Area (IHSS 155), and Americium Zone, RF/RMRS-97-084, Revision 1*, August 1998

RMRS, 1999, *Sampling and Analysis Plan for Groundwater Monitoring at the 903 Pad/Ryan's Pit VOC Plume*, RF/RMRS-99-312 UN

Appendix A
Well Logs

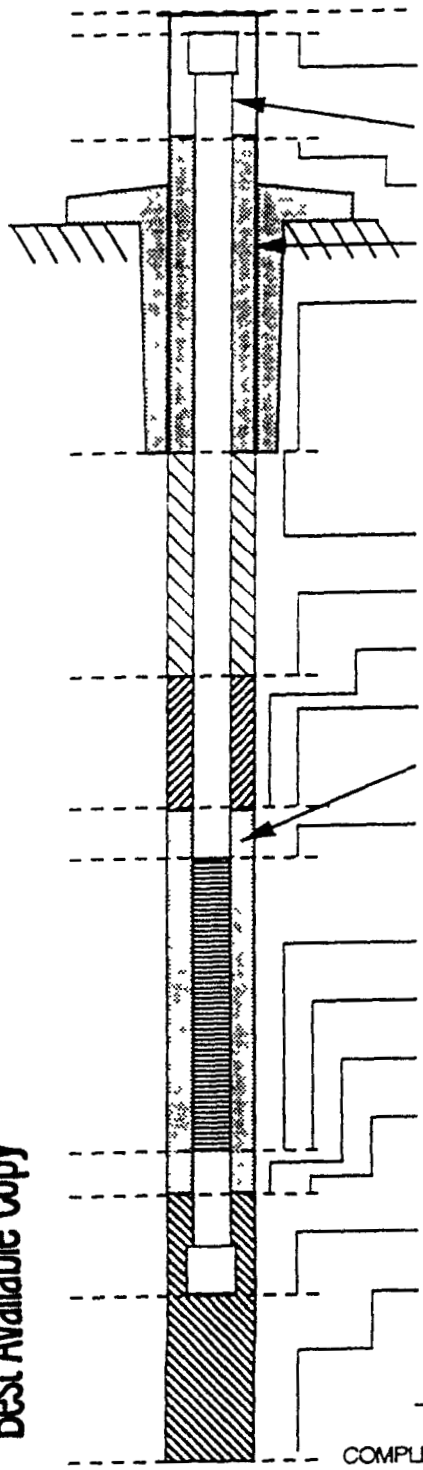
U S Department of Energy Rocky Flats Plant

Form GT 6B
(Rev 3)
ORR 3/31/94

Groundwater Monitoring Well and Piezometer Report

LOCATION CODE 90099 PROJECT NAME 903 Pad/Ryan's Pit Plume PROGRAM Groundwater
SCREENED FORMATION Colluvium/bedrock DRILLING CONTRACTOR Layne Environmental
DRILLING METHOD Hollow-stem auger DATE DRILLED 7/27/99 DATE COMPLETED 7/27/99
RIG GEOLOGIST J Boylan LOGGING GEOLOGIST N/A
COMPLETED DEPTH (FT) 193 ESTIMATED DEPTH TO BEDROCK (FT) 153
BOREHOLE DIAMETER IN SCREENED INTERVAL (IN) 8

QUANTITY OF FLUIDS LOST DURING DRILLING (GAL) N/A
INITIAL WATER LEVEL (FT) 168.1 DATE MEASURED 7/28/99
COMPLETED WATER LEVEL (FT) 116.80 DATE MEASURED 8/2/99



PROTECTIVE CASING TOP (FT) 3.4 (FROM GROUND SURFACE)
SURFACE CASING (STICKUP) TOP (FT) 2.26 7/27/99
SURFACE CASING I D (IN) 20 TYPE Sch 40 PVC
SURFACE SEAL TOP (FT) 0.9 TYPE Sikrete
PROTECTIVE CASING I D (IN) 5 3/8 TYPE Square steel pipe w/hinged lid
PROTECTIVE CASING BOTTOM (FT) 1.6
IF APPLICABLE SECONDARY CASING TOP (FT) 0.5 above grnd BOTTOM (FT) 2.0 below grnd
SECONDARY CASING I D (IN) 15 1/4 TYPE steel
CENTRALIZER O D (IN) N/A TOP (FT) ____ BOTTOM (FT) ____
GROUT SEAL TOP (FT) 1.5 TYPE Pure-Gold grout
BENTONITE SEAL TOP (FT) 5.3 TYPE 1/4" pellets
BENTONITE SEAL BOTTOM (FT) 9.7
FILTER PACK TOP (FT) 9.7
FILTER PACK TYPE 16/40 silica BRAND CSSI
SURFACE CASING BOTTOM (FT) 11.9 SCREEN TOP (FT) 11.9
SCREEN SLOT SIZE (000 IN) 0.010 SCREEN I D (IN) 2.0
SCREEN BOTTOM (FT) 16.9 TYPE Sch 40 PVC BRAND US Filter
SUMP TOP (FT) 16.9 TYPE Sch 40 PVC w/threaded end-cap
FILTER PACK BOTTOM (FT) 19.3
BACKFILL TOP (FT) N/A TYPE ____
BACKFILL BOTTOM (FT) N/A
SUMP BOTTOM (FT) 19.3
TOTAL DEPTH (FT) 19.3

ALL MEASUREMENTS WILL BE MADE FROM GROUND SURFACE.

REMARKS ____

COMPLETED BY J Boylan DATE 7/27/99
CHECKED BY ____ DATE ____

Best Available Copy

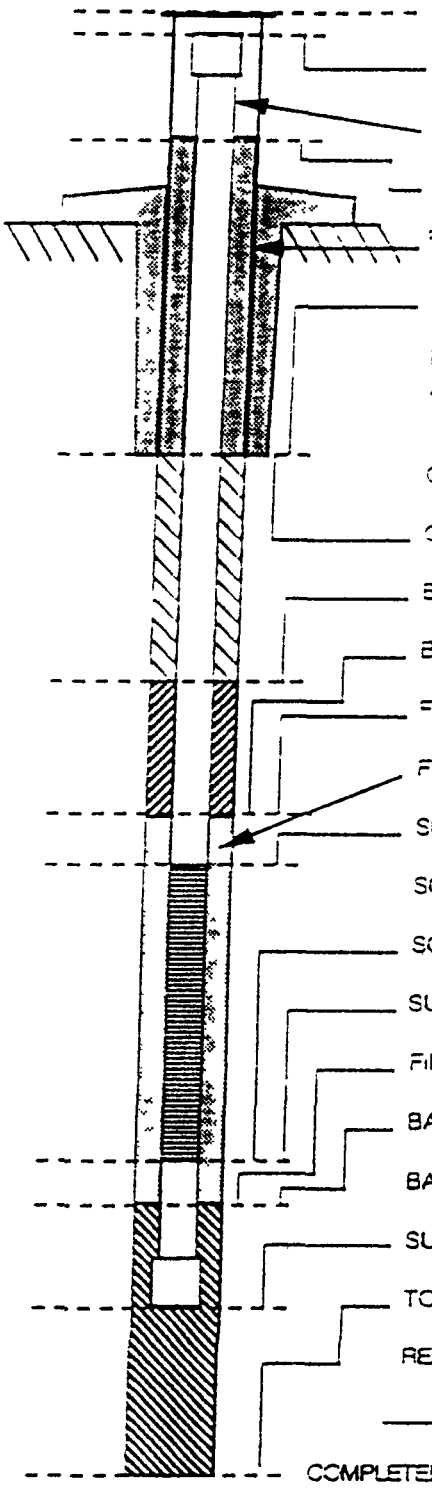
U S. Department of Energy Rocky Flats Plant

Form GT 68
(Rev 3)
ORR 3/31/94

Groundwater Monitoring Well and Piezometer Report

LOCATION CODE 90199 PROJECT NAME 903 PAD/RYAN'S PIT/PU PROGRAM: Groundwater
SCREENED FORMATION: COLLUVIUM DRILLING CONTRACTOR LAYNE CHRISTENSEN
DRILLING METHOD: Hollow-stem auger DATE DRILLED 7-30-99 DATE COMPLETED 7-30-99
RIG GEOLOGIST ~~J. Boynton~~, J. LITHERER LOGGING GEOLOGIST N/A
COMPLETED DEPTH (FT) 13.1 BGS 7-30-99 ESTIMATED DEPTH TO BEDROCK FT 11 BGS
BOREHOLE DIAMETER IN SCREENED INTERVAL (IN) ~~8~~ (see remarks) 7/30/99

QUANTITY OF FLUIDS LOST DURING DRILLING (GAL) N/A
INITIAL WATER LEVEL (FT) DRY DATE MEASURED 7-30-99
COMPLETED WATER LEVEL (FT) DRY DATE MEASURED 8/2/99



PROTECTIVE CASING TOP (FT) 3.6 FROM GROUND SURFACE
SURFACE CASING (STICKUP) TOP FT 2.8
SURFACE CASING I D (IN) 2" TYPE PVC (Sch 40)
SURFACE SEAL TOP FT 1.2 TYPE Sakrete
PROTECTIVE CASING I D (IN) 5 5/8 TYPE Square steel pipe w/hinged lid
PROTECTIVE CASING BOTTOM FT 1.4
IF APPLICABLE SECONDARY CASING TOP FT 0.45 (BG) BOTTOM FT 2.25 (BG)
SECONDARY CASING I D (IN) ~~8~~ (see remarks) 5 1/4 TYPE steel
CENTRALIZER O D (IN) NA TOP FT ____ BOTTOM FT ____
GROUT SEAL TOP FT NA TYPE ____
BENTONITE SEAL TOP FT 1.3 TYPE 3/8" bentonite pellets
BENTONITE SEAL BOTTOM FT 3.6
FILTER PACK TOP FT 3.6
FILTER PACK TYPE 10/20 Silica Sand BRAND CSSI
SURFACE CASING BOTTOM (FT) 5.8 SCREEN TOP (FT) 5.5
SCREEN SLOT SIZE (.000 IN) .020 SCREEN O D (IN) 2.0
SCREEN BOTTOM (FT) 10.5 TYPE Sch 40 PVC BRAND U.S. FILTER
SUMP TOP (FT) 10.5 TYPE 5-in PVC w/threaded end cap
FILTER PACK BOTTOM FT 13.1
BACKFILL TOP (FT) NA TYPE ____
BACKFILL BOTTOM (FT) NA
SUMP BOTTOM (FT) 13.1
TOTAL DEPTH (FT) 13.1

ALL MEASUREMENTS WILL BE MADE FROM GROUND SURFACE.

REMARKS ____

COMPLETED BY J. LITHERER DATE 7-30-99
CHECKED BY ____ DATE ____

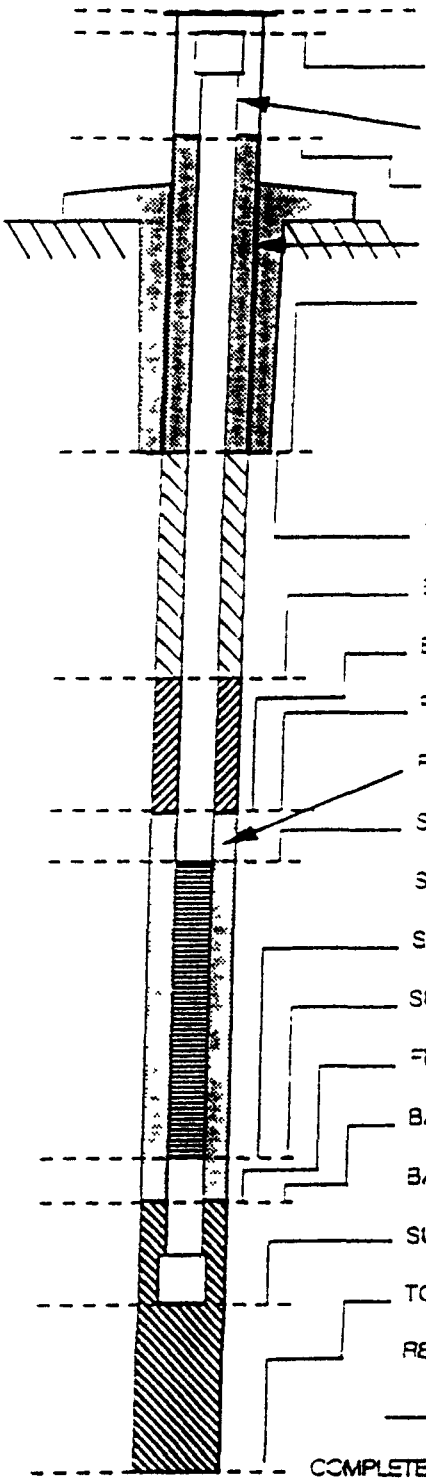
U.S. Department of Energy Rocky Flats Plant

Form GT 68
(Rev 3)
ORR 3/31/94

Groundwater Monitoring Well and Piezometer Report

LOCATION CODE 90299 PROJECT NAME 903 Pad/Ryan's Pit Plume PROGRAM: Groundwater
SCREENED FORMATION: Colluvium DRILLING CONTRACTOR Layne
DRILLING METHOD: Hollow - stem auger DATE DRILLED 7/29/99 DATE COMPLETED 7/29/99
RIG GEOLOGIST J Boylan LOGGING GEOLOGIST N/A
COMPLETED DEPTH (FT) 205 ESTIMATED DEPTH TO BEDROCK FT 18
BOREHOLE DIAMETER IN SCREENED INTERVAL (IN) 8 ~~See remarks~~ 7/29/99

QUANTITY OF FLUIDS LOST DURING DRILLING (GAL) N/A
INITIAL WATER LEVEL FT DRY DATE MEASURED 7/29/99
COMPLETED WATER LEVEL FT 197.5 DATE MEASURED 8/2/99



PROTECTIVE CASING TOP (FT) 3.2 FROM GROUND SURFACE
SURFACE CASING (STICKUP) TOP (FT) 2.0
SURFACE CASING I D (IN) 2.0 TYPE PVC (Sch 40)
SURFACE SEAL TOP FT 1.0 TYPE Sakrete
PROTECTIVE CASING I D (IN) 5 5/8 TYPE Square steel pipe w/hinged lid
PROTECTIVE CASING BOTTOM (FT) 1.5
IF APPLICABLE SECONDARY CASING TOP FT 0.4 ags BOTTOM FT 21 bgs
SECONDARY CASING I D (IN) ~~10~~ 15 1/4 TYPE steel
CENTRALIZER O D (IN) N/A TOP FT ____ BOTTOM FT ____
GROUT SEAL TOP (FT) N/A TYPE ____
BENTONITE SEAL TOP (FT) 1.4 TYPE 1/4" bentonite pellets
BENTONITE SEAL BOTTOM FT 6.5
FILTER PACK TOP (FT) 6.5
FILTER PACK TYPE 16/40 silica sand BRAND CSS I
SURFACE CASING BOTTOM (FT) 8.2 SCREEN TOP (FT) 8.2
SCREEN SLOT SIZE (000 IN) 0.010 SCREEN I D (IN) 2.0
SCREEN BOTTOM (FT) 18.2 TYPE Sch 40 PVC BRAND US Filter
SUMP TOP (FT) 18.2 TYPE Sch 40 PVC w/threaded end-cap
FILTER PACK BOTTOM FT 20.5
BACKFILL TOP (FT) N/A TYPE ____
BACKFILL BOTTOM (FT) N/A
SUMP BOTTOM (FT) 20.5
TOTAL DEPTH (FT) 20.5

ALL MEASUREMENTS WILL BE MADE FROM GROUND SURFACE.

REMARKS ____

COMPLETED BY J Boylan DATE 7/29/99
CHECKED BY ____ DATE ____

12

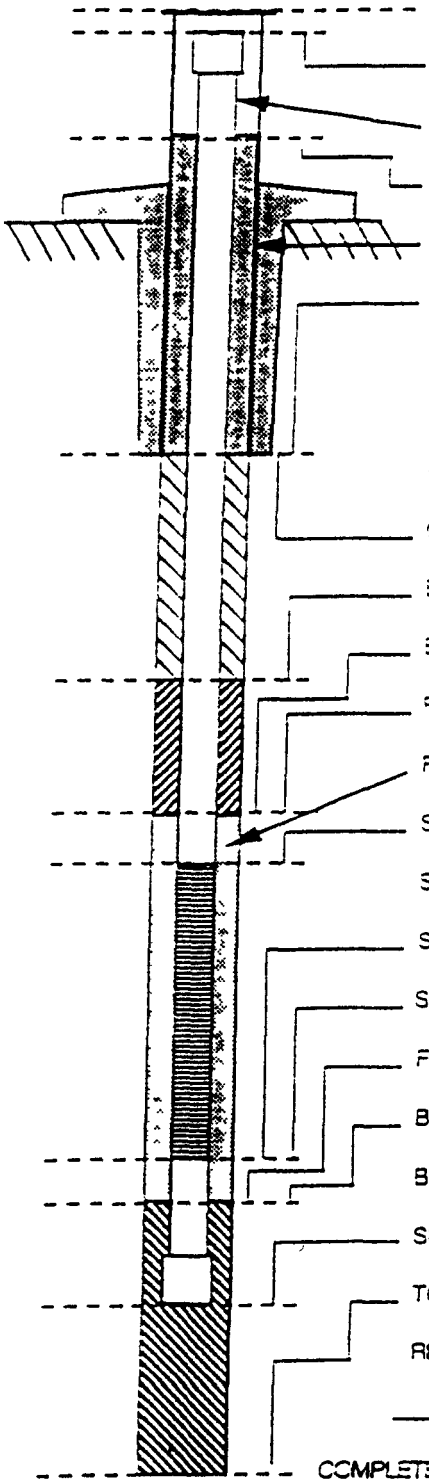
U S. Department of Energy Rocky Flats Plant

Form GT 68
(Rev 3)
ORR 3/31/94

Groundwater Monitoring Well and Piezometer Report

LOCATION CODE 90399 PROJECT NAME 903 Pad/Ryans Pit Plume PROGRAM Groundwater
SCREENED FORMATION BR DRILLING CONTRACTOR Layne
DRILLING METHOD Hollow-stem auger DATE DRILLED 7/28/99 DATE COMPLETED 7/28/99
RIG GEOLOGIST J Baylon LOGGING GEOLOGIST N/A
COMPLETED DEPTH (FT) 21 ESTIMATED DEPTH TO BEDROCK FT 4
BOREHOLE DIAMETER IN SCREENED INTERVAL (IN) 8 (see remarks) 7/28/99

QUANTITY OF FLUIDS LOST DURING DRILLING (GAL) N/A
INITIAL WATER LEVEL (FT) Dry (open hole) DATE MEASURED 7/28/99
COMPLETED WATER LEVEL FT 13.92 DATE MEASURED 8/2/99



PROTECTIVE CASING TOP (FT) 3.5 FROM GROUND SURFACE
SURFACE CASING (STICKUP) TOP (FT) 2.3
SURFACE CASING I D (IN) 2.0 TYPE Sch 40 PVC
SURFACE SEAL TOP FT 1.2 TYPE Sakrete
PROTECTIVE CASING I D (IN) 5 5/8 TYPE square steel pipe w/hinged lid
PROTECTIVE CASING BOTTOM (FT) 1.5
IF APPLICABLE SECONDARY CASING TOP FT 0.5 ags BOTTOM FT 20 bgs
SECONDARY CASING I D (IN) ~~8~~ 15 1/4 TYPE Steel
CENTRALIZER O D (IN) N/A TOP FT ____ BOTTOM (FT) ____
GROUT SEAL TOP FT N/A TYPE ____
BENTONITE SEAL TOP (FT) 1.4 TYPE 1/4" bentonite pellets
BENTONITE SEAL BOTTOM (FT) 6.7
FILTER PACK TOP (FT) 6.7
FILTER PACK TYPE 16/40 silica sand BRAND CSSI
SURFACE CASING BOTTOM (FT) 8.7 SCREEN TOP (FT) 8.7
SCREEN SLOT SIZE (.000 IN) 0.010 SCREEN I D (IN) 2.0
SCREEN BOTTOM (FT) 18.7 TYPE Sch 40 PVC BRAND US Filter
SUMP TOP (FT) 18.7 TYPE Sch 40 PVC w/threaded end cap
FILTER PACK BOTTOM (FT) 21
BACKFILL TOP (FT) N/A TYPE ____
BACKFILL BOTTOM (FT) N/A
SUMP BOTTOM (FT) 21
TOTAL DEPTH (FT) 21

ALL MEASUREMENTS WILL BE MADE FROM GROUND SURFACE.

REMARKS ____

COMPLETED BY J Baylon DATE 7/28/99
CHECKED BY ____ DATE ____

13/13

903 Pad / Ryan s Pit Plume Monitoring Wells and Piezometer Location Map

Figure 1

EXPLANATION

- 1998 Well Lo (IT 1998)
- Exist g Well Loc
- T mp ry Well Loc io
- Perm nent Well Loca
- Se p
- na re vegeta i

Standard M p Fe t re

- Lak d po d
- St m ditche h d nag f
- Fen d he b
- Cont (5 Fo)
- D rt ro d

DA SOURCE

N

Scal 1 1530
1 n h epresent approximately 128 feet

0 0 100 200ft

Stat Plan Coordi at Pr ject
Colo ado Cent al Zon
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by

RMRS Rocky Mountain Remediation Services LLC
Geographic Information Systems Group

MAP ID: 99-0281 August 26 1999

NT S /p j /fy99/ 9 02 /f'g 3 ml

Best Available Copy